

UTAH RENEWABLE ENERGY BUSINESS SUMMIT

November 15, 2010



Utah Governor's Office *of*
Economic Development

BUSINESS • TOURISM • FILM

UTAH
LIFE ELEVATED™



UTAH*RENEWABLE*ENERGY
BUSINESS*SUMMIT
November 15, 2010



- **Public company**
Headquartered in Bilbao, Spain
- **2009 Worldwide Revenue: \$4.5B USD**
- **30 Manufacturing Locations in 4 countries:**
Spain/USA/China/India
- **Vertically integrated manufacturing**
- **7,000 employees worldwide**
- **19,000 MW of installed Wind Turbines in 26 countries**
- **21,000 MW in Wind Farm developments**
EU/US/China

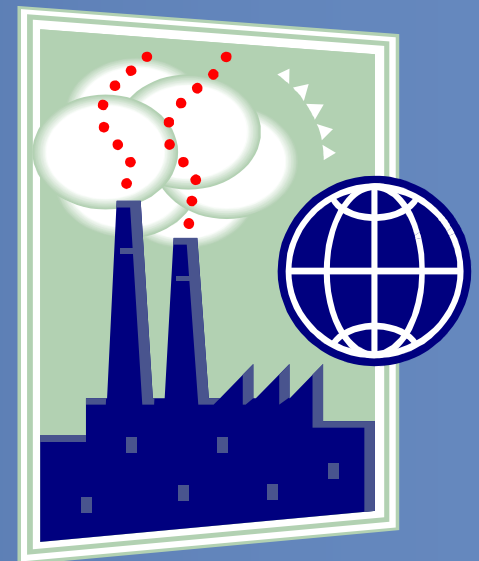


Gamesa Overview

Gamesa US



- **US division of Gamesa Corporation Technology**
Headquarters in Langhorne, PA
- **Design, manufacture, erect and development of wind turbines and farms**
- **2 manufacturing locations in Pennsylvania**
Fairless Hills and Ebensburg, PA
- **800+ employees**
- **2165 MW installed and under management**
- **\$200 M invested since 2005 in PA**





CHRONOLOGY of GAMESA US:

- 2002 Decision by Board of Directors to enter the N.A. market
- Q1 2003 Began R&D on G8X product for N.A. market
- Q3 2003 First Gamesa wind farm constructed in Compton, IL – 63 units G52
- Q4 2003 Gamesa Wind US division established
- 2004 Pennsylvania selected as the site for Gamesa US headquarters
- Q1 2005 Philadelphia sales office opened
- Q4 2005 Site preparation began in Fairless Hills, PA for a manufacturing plant
- Q1 2006 Boulevard, CA wind farm was constructed – 25 units G87
- Q3 2006 Manufacturing of nacelles, blades & towers began in Fairless Hills, PA
- Q4 2006 Manufacturing of blades began in Ebensburg, PA
- Q4 2007 1000MW installed in N.A.
- Q1 2008 Construction of 2nd Gamesa Wind Farm in Portage, PA 35 units G87
- Q3 2008 Opened Gamesa headquarters in Oxford Valley, PA
- Q3 2009 2000 MW installed in N.A.
- Q4 2009 Dirk Matthys named Chairman and CEO of Gamesa U.S.

Gamesa has over 2,000 MW installed in the US

2005

| # of Turbines | Type | Windfarm |
|---------------|------|---------------|
| 12 | G87 | Bear Creek |
| 63 | G52 | Mendota Hills |
| 25 | G87 | Kumeyaay |

2006

| # of Turbines | Type | Windfarm |
|---------------|------|--------------|
| 40 | G87 | Allegheny I |
| 46 | G87 | GSG |
| 13 | G87 | Locust Ridge |
| 12 | G87 | Mesquite |
| 88 | G83 | Mesquite |
| 45 | G87 | Sand Bluff |

2007

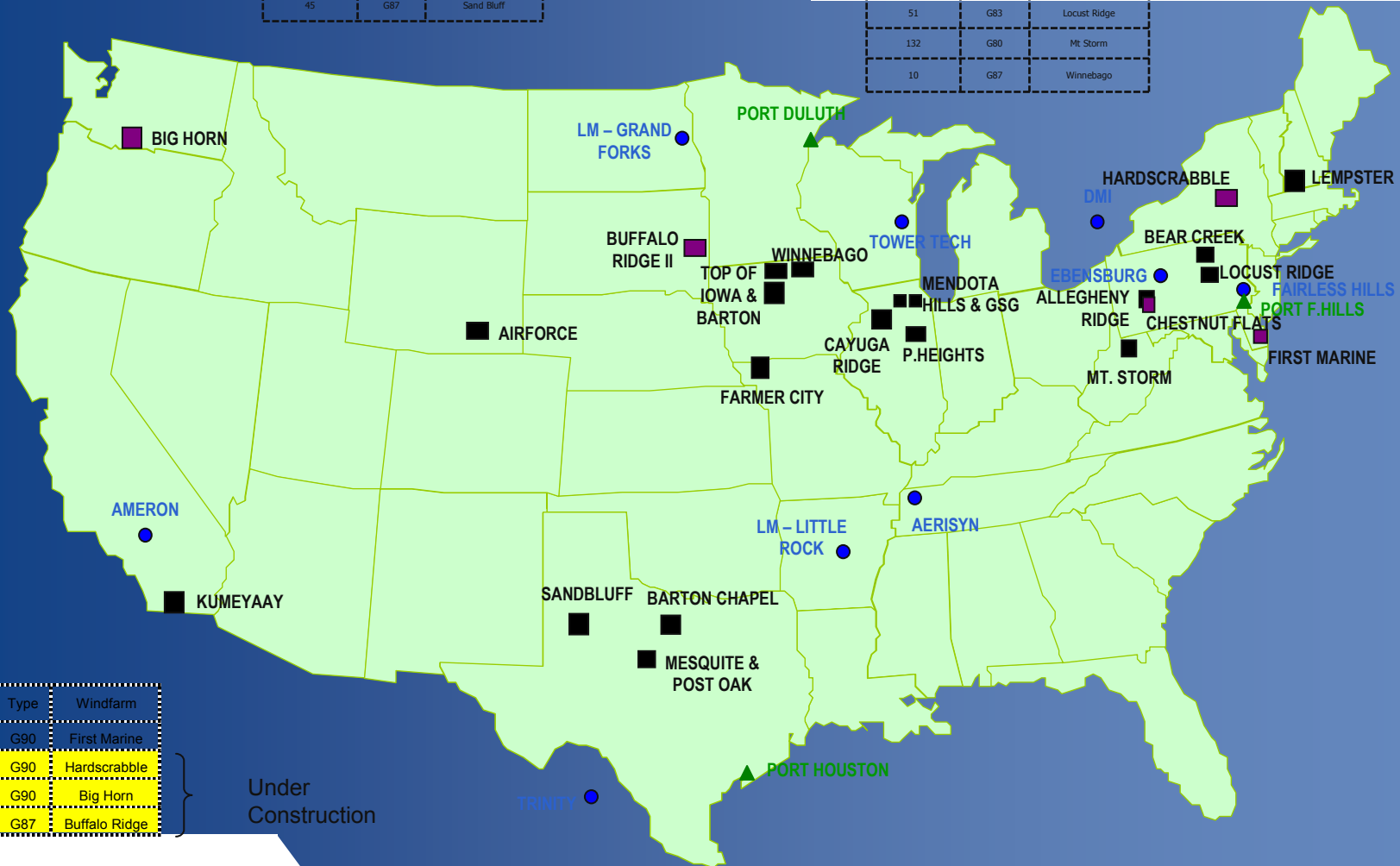
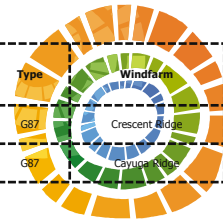
| # of Turbines | Type | Windfarm |
|---------------|------|---------------|
| 60 | G87 | Barton Chapel |
| 100 | G87 | Post Oak |
| 36 | G87 | P. Heights |
| 40 | G87 | Top of Iowa |

2008

| # of Turbines | Type | Windfarm |
|---------------|------|--------------|
| 34 | G87 | Allegheny II |
| 14 | G83 | Barton |
| 66 | G87 | |
| 73 | G87 | Farmer City |
| 12 | G87 | Lempster |
| 51 | G83 | Locust Ridge |
| 132 | G80 | Mt Storm |
| 10 | G87 | Winnebago |

2009

| # of Turbines | Type | Windfarm |
|---------------|------|----------|
| 150 | G87 | |



2010

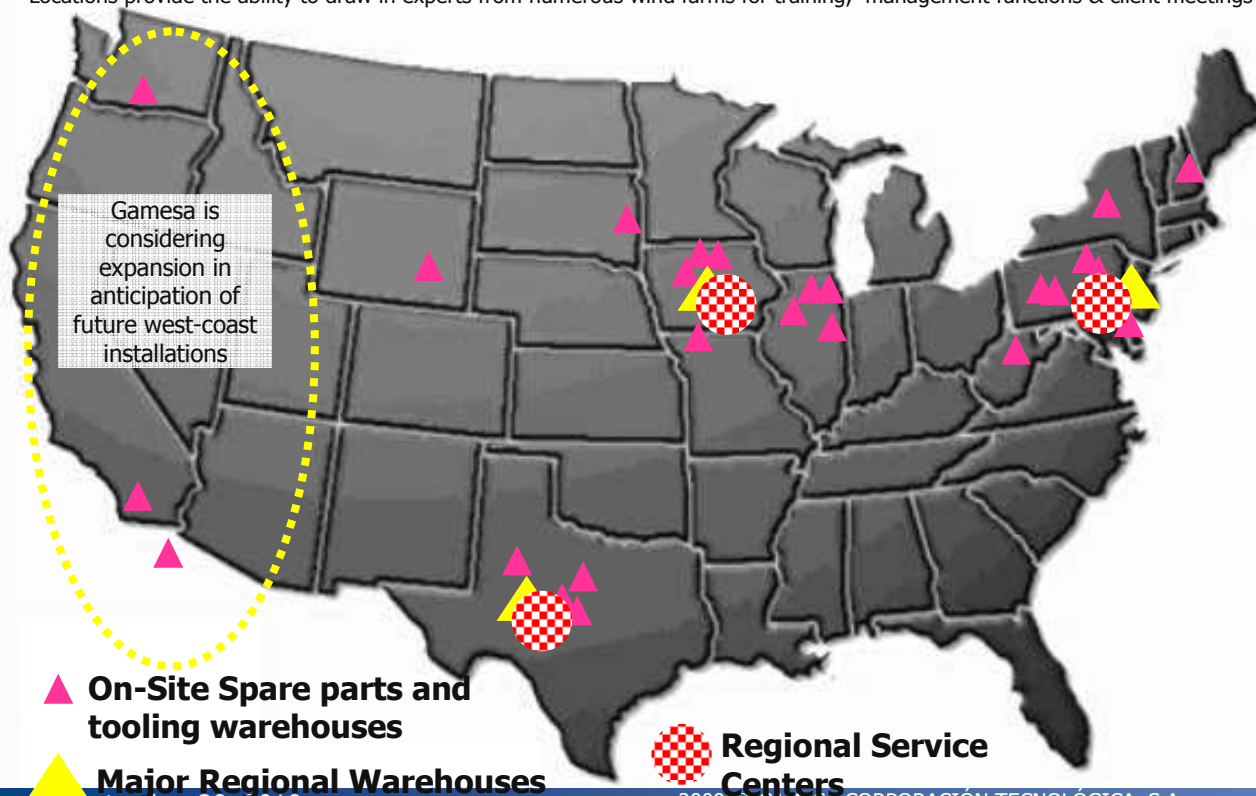
| # Of Turbines | Type | Windfarm |
|---------------|------|---------------|
| 1 | G90 | First Marine |
| 37 | G90 | Hardscrabble |
| 25 | G90 | Big Horn |
| 105 | G87 | Buffalo Ridge |

Gamesa has 25 on-site spare part & tooling warehouses, 3 major regional warehouses and 3 Service Centers



Service Centers

- Provides centralized management of Project Managers, Site Supervisors and O&M technicians
- Each Regional Office also serves as a warehouse for tooling & spare parts
- Regional structure ensures fast deployment of technicians and spare parts
- Locations provide the ability to draw in experts from numerous wind farms for training, management functions & client meetings



25 On-Site Warehouses

- Eliminates down-time due to waiting for tooling or spare parts
- Ensures accountability between OEM and subcontractors for tooling
- Asset Security
- Centralized management of tooling calibration

3 Regional Warehouses

- Long-established in Bristol PA, Des Moines IA, and Dallas TX
- Storage of critical components (generators and transformers) in addition to standard parts to maintain the highest levels of availability

The wind industry is transforming itself rapidly

THE SLOWDOWN OF 2009 AND 2010 HAS TRANSFORMED THE WIND INDUSTRY

1 MARKET:

- o Recent volatility driven by regulatory uncertainty
- o Long term growth trend supported by:
 - o Onshore in Europe through Eastern Europe
 - o Growth coming from Asia and other emerging markets – plus US once regulation clarifies
 - o Offshore taking off after 2013
 - o Wind technology close to grid parity/acceptance as established generation technology in relevant markets

2 CLIENTS:

- o Moving towards professional operators – utilities and large IPPs- seeking reliable, long term WTM partners that offer expertise along the whole value chain
- o Wind power internationalization requires WTM global support Basis for competition is offering the best possible CoE as a combination of project CAPEX, O&M costs, performance and availability over the wind farm's life

3 SUPPLIERS:

- o Large industrial conglomerates (Western present, Asian entering) have increased their market share at the expense of pioneers
- o Smaller, local players are reducing their presence

Value proposition based on client expectations

Gamesa



GAMESA VALUE PROPOSITION

Competitive CoE

Superior reliability and service offering

The right products with superior technology

Extensive geographical presence

Flexible response times

Gamesa



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Introduction of New Products:

2010:

- 100 Meter Tower
- Introduction of 90 meter rotor – Class IIIA winds
- Seismic towers
- High altitude package designed for 2000 meters (6000 ft)
- Cold weather package designed for -40C
- Gamesa NRS (Noise Reduction System)
- Shadow control for blades
- O&M Services - Improvements and expanded coverage
- WOSS System – WF optimization sequencing system (Lean)

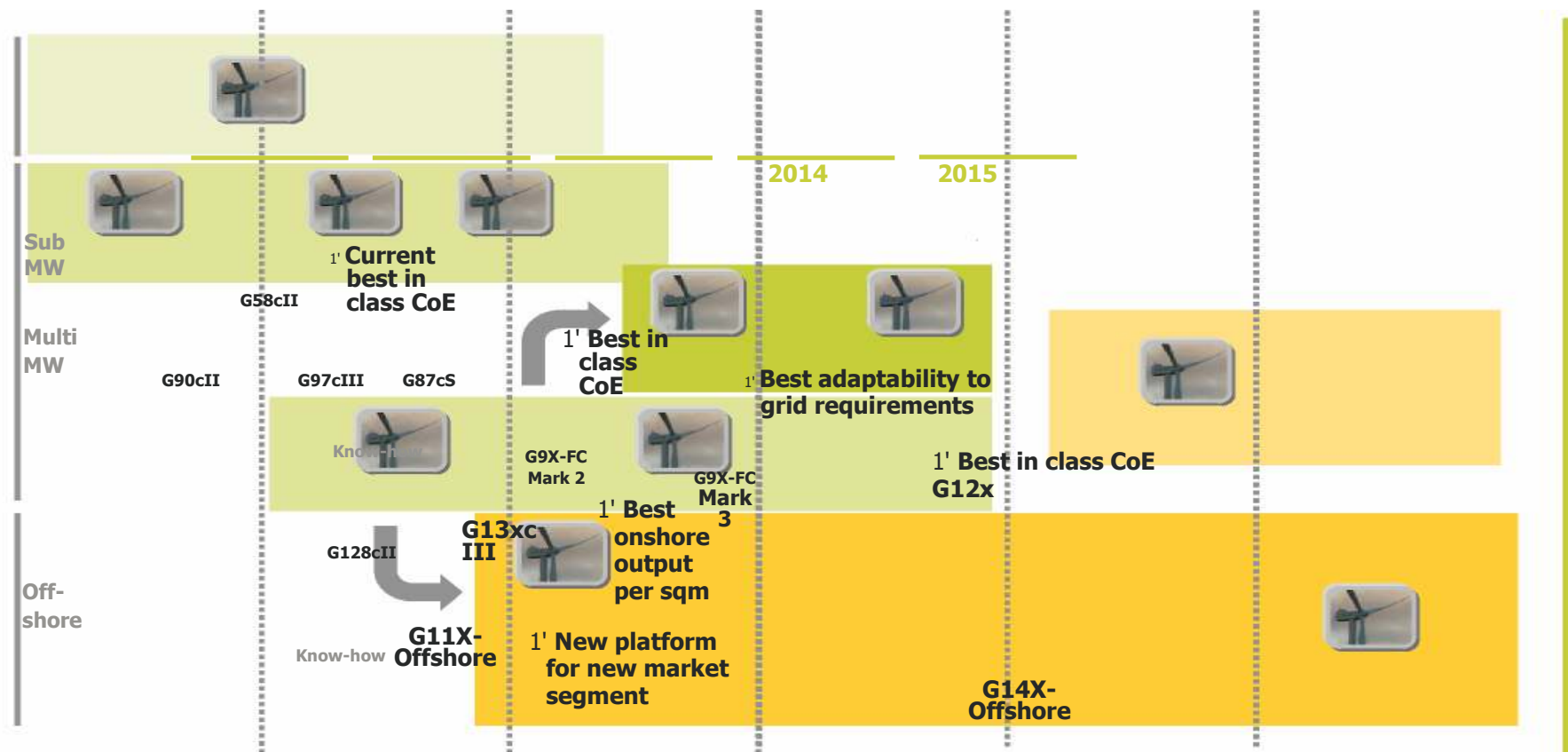
2011:

- G9X 2.0 MW wind turbine – Designed for Class IIA & IIIA winds
- Prototype of G10X – 4.5 MW wind turbine
- Gamesa participates and is a leader in several organizations that are working on improving Wind Turbine design and efficiency

Ambitious product innovation roadmap... until 2015



Innovation roadmap –5 new product families in 5 years



Gamesa Overview: Gamesa Worldwide Industrial Footprint Capacity



Production centers in Europe, America, India and Asia



Nacelles
6 FACTORIES
>4400 MW




Blades
7 FACTORIES
>3.500 MW



Root joints
1 FACTORY
5.000 un.



Blade moulds
1 FACTORY
6 moulds
G8X**



Electrical equipment
(Generators & Cabinets)
4 FACTORIES
>1.900 MW



Gearboxes
6 FACTORIES
>2.300 MW

*Joint Venture with Grupo Daniel Alonso

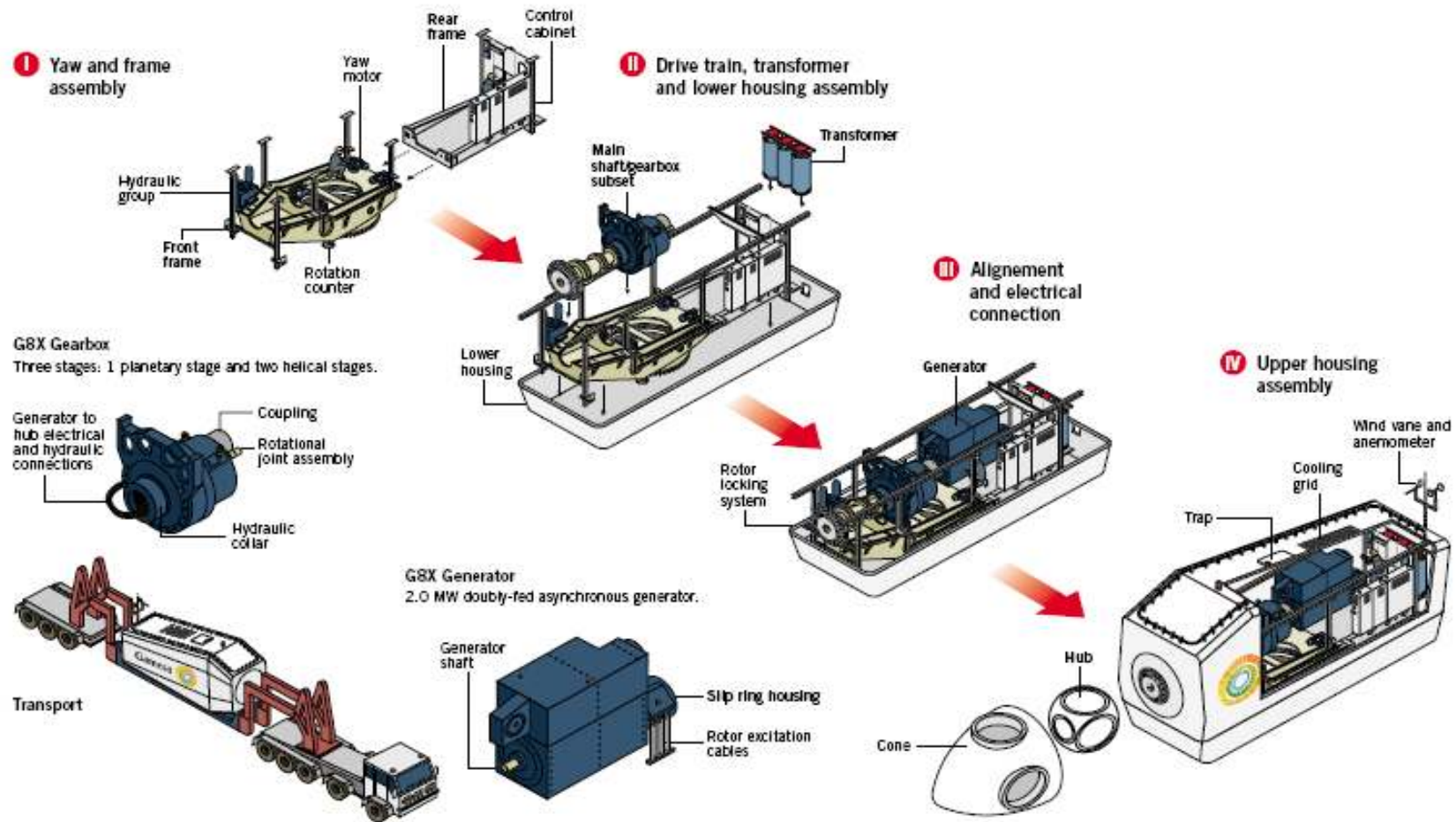
**Possibility of manufacturing G5X moulds

Large industrial capacity. 25 sites globally

Gamesa Overview: Gamesa Worldwide Industrial Footprint Capacity



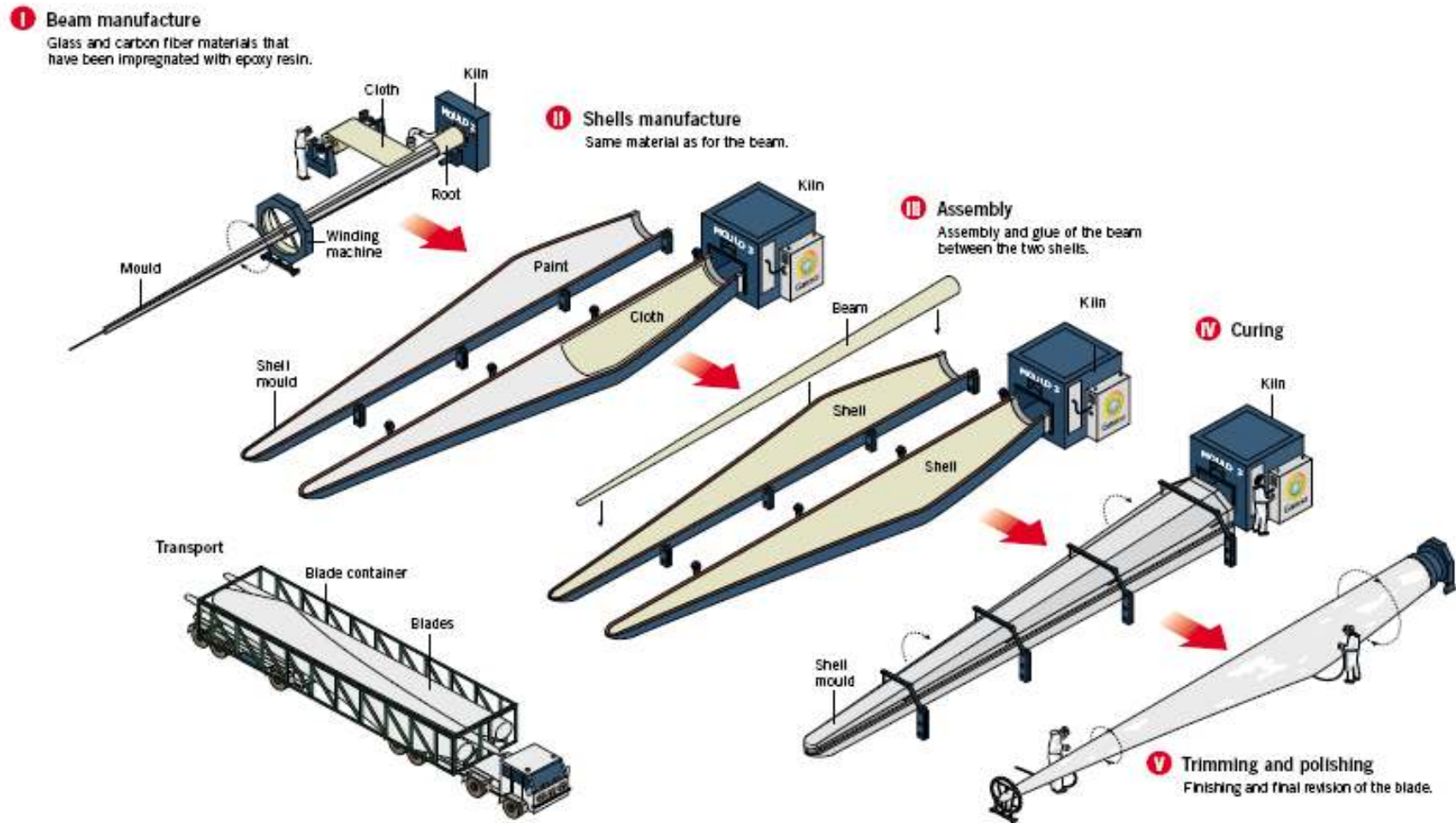
Manufacturing process: Nacelles Assembly



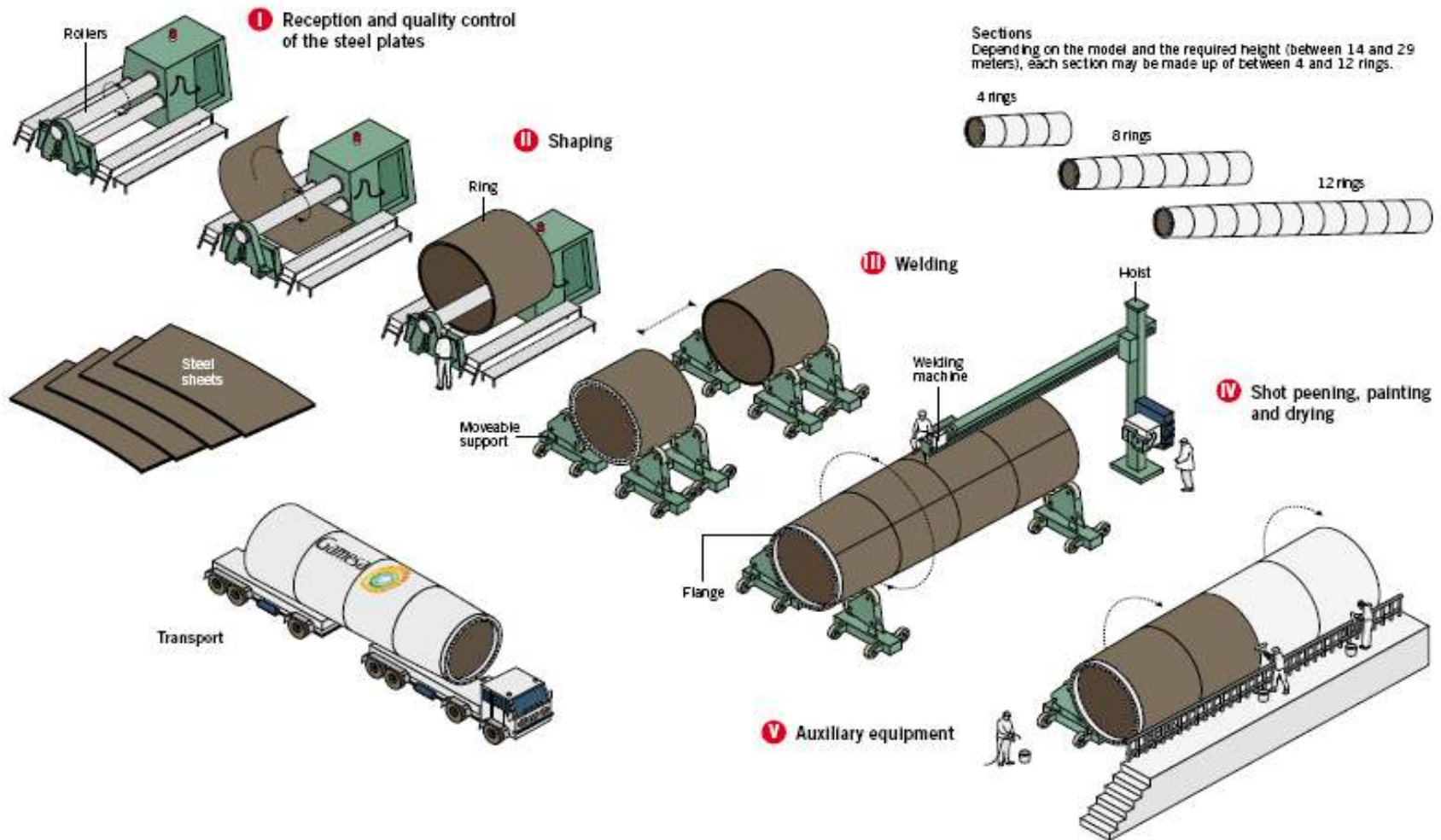
Gamesa Overview: Gamesa Worldwide Industrial Footprint Capacity



Manufacturing process: Blades



Manufacturing process: Towers





Global purchasing presence
Resources in EU/NA/ASIA/INDIA
Strategic purchasing approach
Total cost of ownership
Focus on local supply chains
Reduce cycle time to meet customer needs
Optimized logistics patterns
Supplier development program
Performance metrics & feedback
Introduction of lean techniques
Improve process &
eliminate waste



- Heavy investment in WTG tooling is a major challenge for NA suppliers
 - Amortization of tooling into the piece price

Opportunities for NA suppliers exist in several areas:

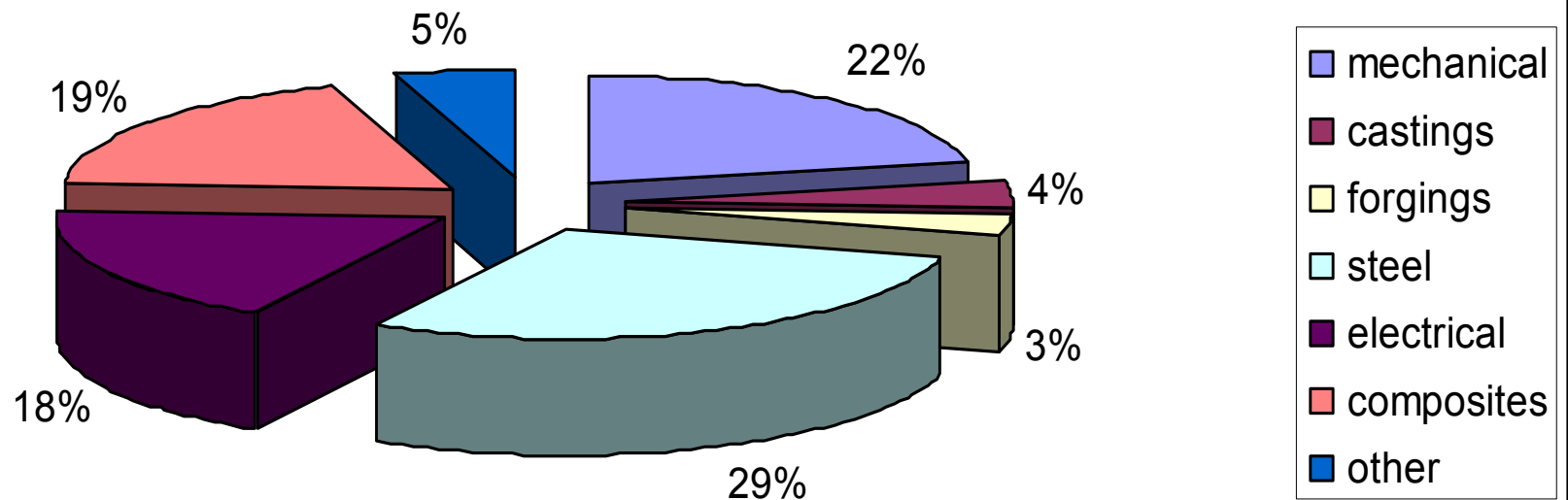
- Specific quality inspection providers for electrical, electro mechanical and gear box inspection
- Firms that can do Operations & Maintenance work up tower in the wind farms
 - This would include preventative maintenance and/or “punch-list” work
 - Requires extensive certifications
- Repair of blades
- Suppliers of large industrial portable generators
- Fabricators of large, machined weldments

Opportunities for NA suppliers exist in several areas:

- Electrical cabling
- Engineered tools, fixtures and inspection devices for maintenance of wind turbines
- Transport of major assemblies to the wind farms
- Environmental inspection services
- Construction contractors to complete the civil work on the wind farms
 - Support the erection of wind turbines

Gamesa needs suppliers that can bring system/design solutions to improve wind turbine availability!

GAMESA US - SPEND - COMMODITY 2009



- **Successfully pass initial supplier quality assessment**
- **ISO9000 Certification**
- **Zero defect quality policy & systems**
- **ISO14001 Certification plan to achieve**
- **Strong customer satisfaction policy**
- **Advance technological capabilities**
- **24 hours customer response policy to delivery and/or quality issues**
- **Advance product quality planning (APQP) system implemented**
- **Production part approval process (PPAP) implemented**
- **Lean culture and techniques utilized**
- **Manufacturing & administration**
- **Healthy Financial Status**

Purpose:

- **Approval of Suppliers Quality and Process Capabilities**
- **Approval of materials and components from a supplier with the goal of achieving zero defects during serial production**
- **Verifies suppliers quality planning processes**
- **Validates the component processes**
- **Ensure components meet specification and latest revision level**
- **Homologation Process Steps:**
 - **Phase 1: Supplier's Qualification Assessment**
 - **Phase 2: Supplier Feasibility (Capability & Capacity)**
 - **Phase 3: Process and Product Design**
 - **Phase 4: Process Validation and Serial Mfg. Approval**
 - **Phase 5: Initial Samples**
 - **Phase 6: PPAP Closing. Start of Mass Production:**



Gamesa Overview

Supplier Balanced Score Card



● Cost (Purchasing)

| |
|---|
| Material cost reduction as a % of spend |
| Acceptance of contract terms |
| Long Term Agreement in place |
| Productivity reduction plan in place? |
| Supplier currently in Gamesa SIP program? |

● Quality (SQA):

| |
|--------------------------------|
| NCR's # at production |
| NCR's cost percentage |
| NCR's # at wind farm |
| Advance quality planning |
| Lack of notification deduction |

● Delivery (Planning):

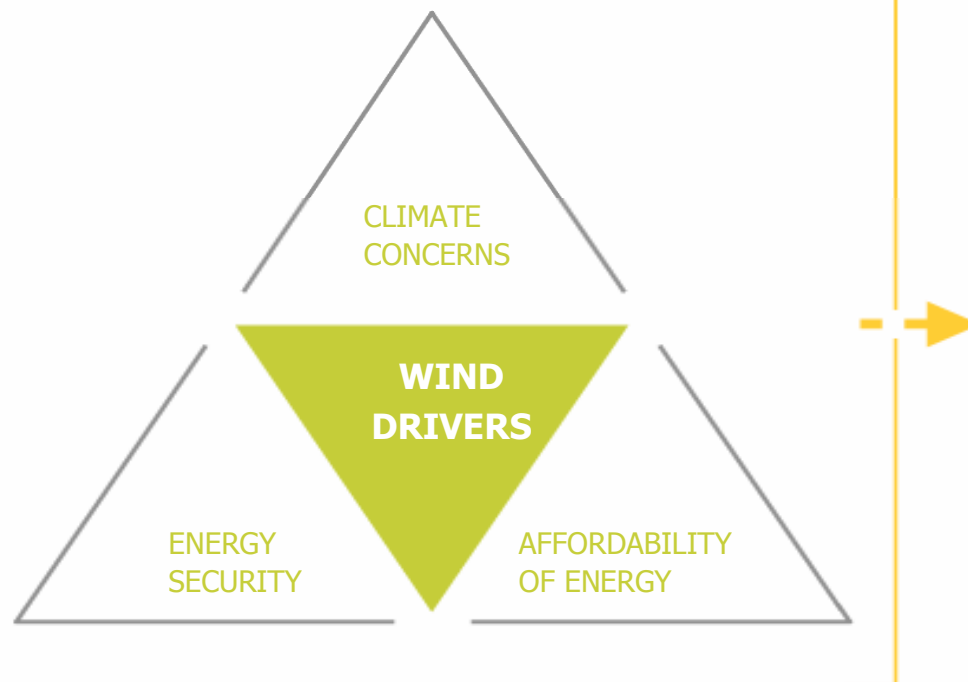
| |
|---|
| Delivery performance to due on dock dates |
| Participation in Gamesa pull system? |
| Following packaging instructions? |
| Lead time reduction plan in place? |
| Line disruption deduction |

● Technology (Eng.):

| |
|--------------------------|
| Catia/Cad facilities |
| Bench mark technology |
| Best practices design |
| Design capabilities/DFSS |
| Design failure deduction |

But the growth fundamentals are still in place

Gamesa



WHY WIND?

- **Reduces CO₂ emissions**
- **Reduces dependence from fossil resources**
- **Increases energy security**
- **Increases price stability**

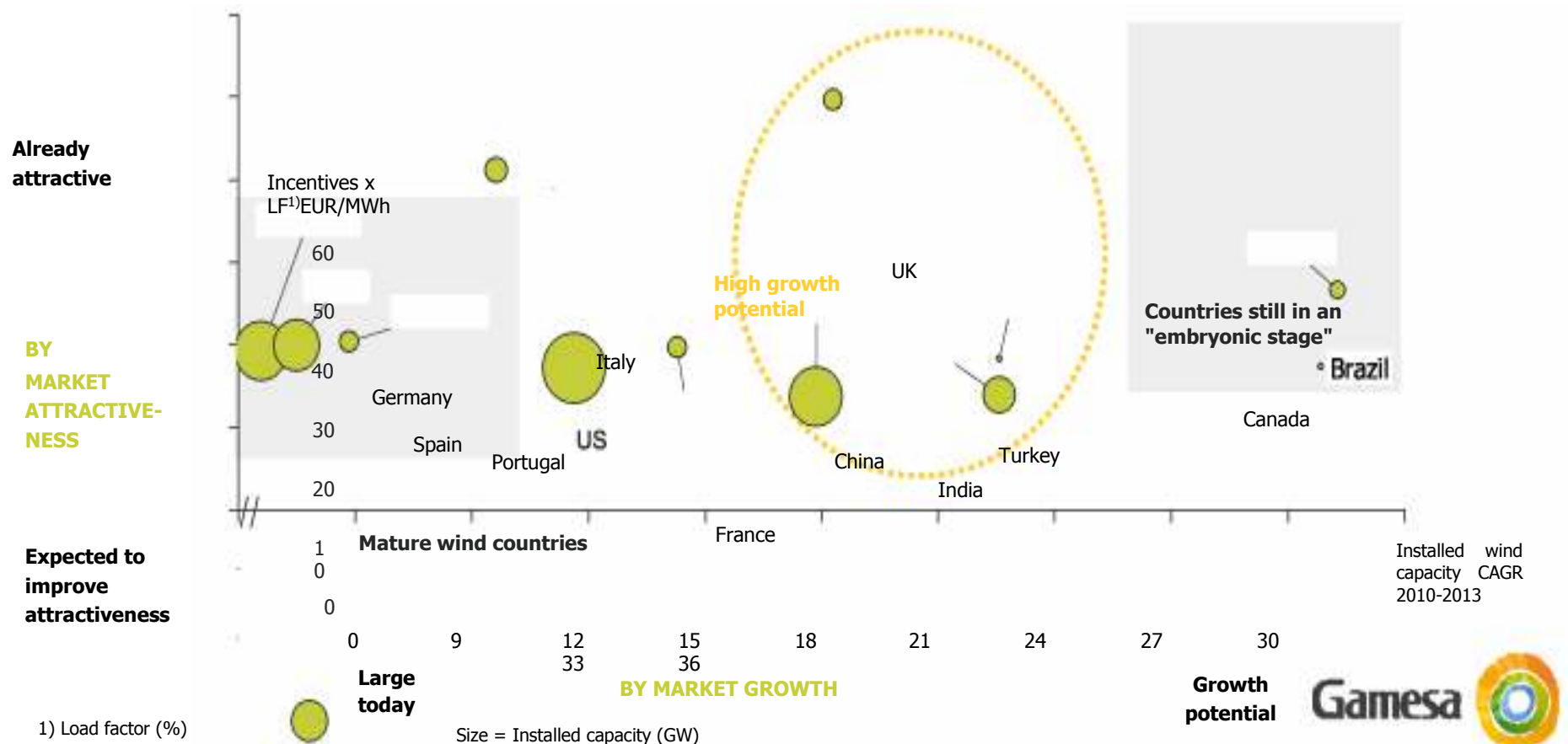
**Competitive
Cost of Energy (CoE) is
key**



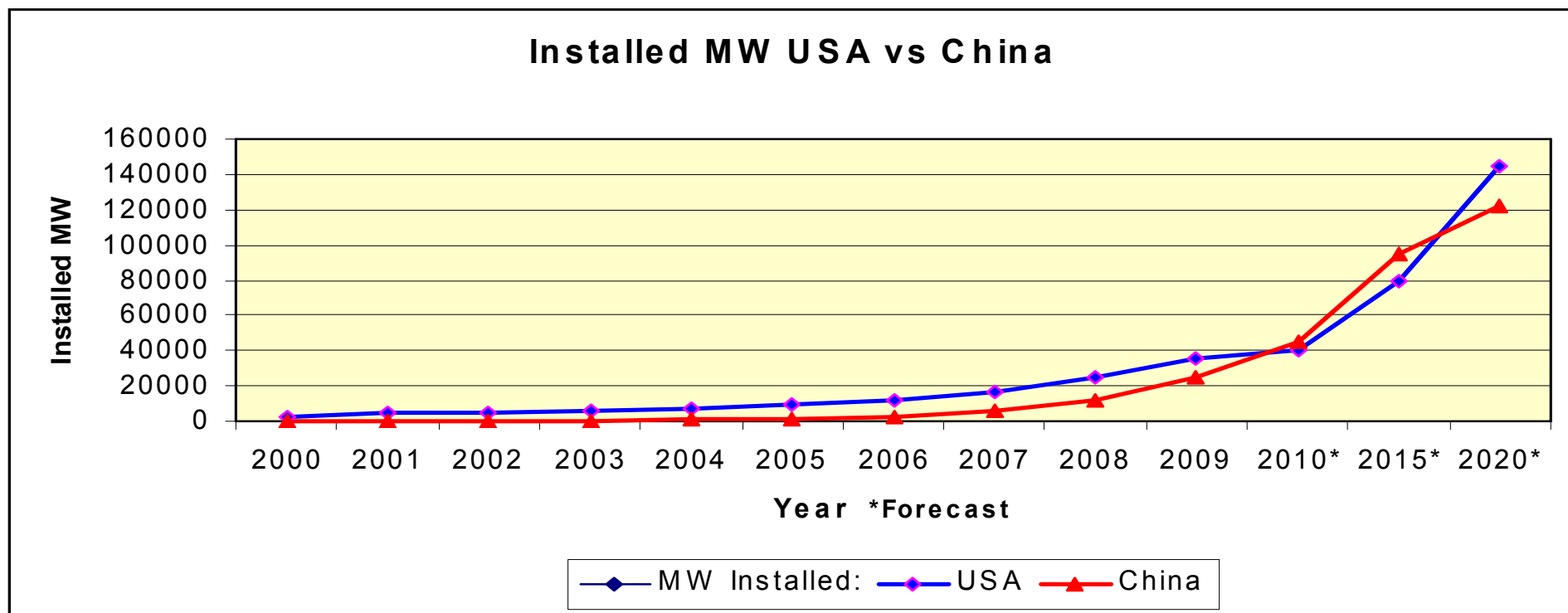
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With attractive opportunities mostly in Emerging markets

Wind power market attractiveness, 2010-2020



China continues to increase MW rapidly:



China REA projects China will be at 122 GW by 2020!

“Gamesa and Northrop Grumman Shipbuilding join forces in offshore wind technology”

- **Madrid/New York, 6 October 2010.** Gamesa, a global technology leader in the wind energy business (through its U.S. based subsidiary), and the Newport News Shipbuilding operations of Northrop Grumman Corporation, a leading American defense company and America’s largest shipbuilder, have signed an agreement to work together on offshore wind technology.
- The agreement calls for the companies to cooperate on the launch of Gamesa’s first G11X -5.0 MW offshore prototype, in the United States, using Gamesa's multi-megawatt technology and Northrop Grumman Shipbuilding’s broad experience in challenging marine environments.
- Gamesa is currently designing and developing a G11X- 5.0 MW offshore Wind Turbine (WTG), specifically for the marine environment, built upon the technologies already extensively tested and validated in the G10X-4.5 MW platform. Gamesa is teaming with Northrop Grumman Shipbuilding-Newport News to utilize their proven expertise in heavy load logistics, systems performance and reliability and the applications of such technologies in the marine



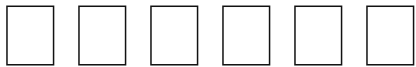


Gamesa:

- **Global Presence**
- **Local Focus**



Thank You!



Muchas Gracias

Vielen Dank!

谢谢！

